

PATENT COOPERATION TREATY

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Commissioner
US Department of Commerce
United States Patent and Trademark
Office, PCT
2011 South Clark Place Room
CP2/5C24
Arlington, VA 22202
ETATS-UNIS D'AMERIQUE
in its capacity as elected Office

Date of mailing: 08 February 2001 (08.02.01)	
International application No.: PCT/NL99/00489	Applicant's or agent's file reference: P10237PC00
International filing date: 29 July 1999 (29.07.99)	Priority date:
Applicant: BRILMAN, Arend, Jan	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International preliminary Examining Authority on:
04 July 2000 (04.07.00)

☐ in a notice effecting later election filed with the International Bureau on:

2. The election ☒ was
☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35	Authorized officer: J. Zahra Telephone No.: (41-22) 338.83.38
---	---

PATENT COOPERATION TREATY


PCT

12

REC'D 23 NOV 2001

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference P10237PC00	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/NL99/00489	International filing date (day/month/year) 29/07/1999	Priority date (day/month/year) 29/07/1999
International Patent Classification (IPC) or national classification and IPC A61B5/113		
Applicant BRILMAN, Arend Jan		
<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 7 sheets, including this cover sheet.</p> <p><input checked="" type="checkbox"/> This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of 5 sheets.</p>		
<p>3. This report contains indications relating to the following items:</p> <ul style="list-style-type: none"> I <input checked="" type="checkbox"/> Basis of the report II <input type="checkbox"/> Priority III <input checked="" type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability IV <input type="checkbox"/> Lack of unity of invention V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement VI <input type="checkbox"/> Certain documents cited VII <input type="checkbox"/> Certain defects in the international application VIII <input type="checkbox"/> Certain observations on the international application 		
Date of submission of the demand 04/07/2000	Date of completion of this report 21.11.2001	
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer Kempin, H-F Telephone No. +49 89 2399 2716	



**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/NL99/00489

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, pages:

2-16	as originally filed	
1,1a	with telefax of	31/08/2001

Claims, No.:

1-14	with telefax of	31/08/2001
------	-----------------	------------

Drawings, sheets:

1/5-5/5	as originally filed
---------	---------------------

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/NL99/00489

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

III. Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been examined in respect of:

- ☐ the entire international application.
- ☒ claims Nos. 1-4, 14.

because:

- ☒ the said international application, or the said claims Nos. 1-4, 14 relate to the following subject matter which does not require an international preliminary examination (*specify*):
see separate sheet
- ☐ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. are so unclear that no meaningful opinion could be formed (*specify*):
- ☐ the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.
- ☐ no international search report has been established for the said claims Nos. .

2. A meaningful international preliminary examination cannot be carried out due to the failure of the nucleotide and/or amino acid sequence listing to comply with the standard provided for in Annex C of the Administrative Instructions:

- ☐ the written form has not been furnished or does not comply with the standard.
- ☐ the computer readable form has not been furnished or does not comply with the standard.

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/NL99/00489

1. Statement

Novelty (N)	Yes: Claims 5-13
	No: Claims
Inventive step (IS)	Yes: Claims 5-13
	No: Claims
Industrial applicability (IA)	Yes: Claims 5-13
	No: Claims

2. Citations and explanations
see separate sheet

Concerning Section III (Non-establishment of opinion ...)

1. Method **claim 1** includes the step of recording a movement history of the individual, on the basis of which an information signal can be generated. Therefore, Claim 1 relates to a collection of data which is of value for the prevention of certain diseases (e.g. suffocation or decubitus ulcers; see page 1, lines 5-9). Consequently, the steps defined in claim 1 concern the gathering of information from the body of a patient in the course of establishing a diagnosis, since diagnosis comes before prevention, and thus qualify the claim as a diagnostic method. Reference is made to decision T0964/99 of a Technical Board of Appeal of the EPO (to be published in the Official Journal EPO). This decision is, of course, not binding for examination under the PCT. However, the relevant provisions of the PCT (Rule 67.1(iv)) and EPC (Art.52(4)) are almost identical. Therefore, the examiner of this International Preliminary examining Authority considers that the reasoning of the Board is also applicable for present claim 1.

The dependent **claims 2-4** include the steps of claim 1. The method claims relate thus also to subject-matter mentioned in Rule 67.1(iv) PCT, in particular to a diagnostic method, for which no preliminary examination needs to be carried out (Art.34(4)a)i) PCT).

2. Use **claim 14** is equivalent to a method claim since it shall protect an activity (see the PCT Guidelines CIII-3.1 according to which there are only two basic categories of claims). Therefore, it is considered that the reasoning developed here-above with respect to claim 1 is -mutatis mutandis- also applicable to claim 14.

Concerning Section V (Reasoned statement ...)

1. Reference is made to the following documents:

D1: WO 99 04691 A (SENSITIVE TECHNOLOGIES, LLC) 4 February 1999
D2: EP-A-0 849 715 (GGT) 24 June 1998
2. The document D1 is regarded as being the closest prior art to the subject-matter

of **claim 5**, and discloses (the references in parentheses applying to this document):

an apparatus for registering movements of at least one part of the body of an individual, on the basis of a number of parameters, and generating a signal on the basis of at least one pre-set threshold value of at least one parameter or set movements for use in registering positions of individuals, in particular relatively young children, which apparatus comprises at least one sensor part, a receiver, in particular a base station, transmitting means and receiving means for wireless communication between the sensor part and the receiver, wherein the sensor part comprises means for attachment to or onto the individual in question, at any rate the at least one part of the body (see reference numeral 120 in figure 1 and page 15, line 19 to page 16, line 9).

The apparatus of claim 5 differs from the apparatus of D1 in that it comprises at least one movement sensor capable of registering movements of said at least one part of the body of the individual whereby movement patterns of lying positions are generated.

The objective problem to be solved was thus to provide an apparatus which is particularly adapted for registering movement patterns of individuals who are lying. The apparatus of D1 can distinguish between different positions but is not suitable to register movement patterns as defined in claim 1. Since D1 expressly discourages the skilled person from using movement transducers (see pages 1, 2 "Background of the invention"), the skilled person would not consider to replace the two-part sensor of D1 by a movement sensor as defined in claim 1. Since the cited passage is vague concerning other structural or functional features of the known apparatus, no further limitation of the subject-matter of claim 1 appears possible on the basis of this cited passage.

Document D2 is also only relevant in connection with the recognition of different positions to detect if a person has fallen. It is not suitable to detect movement patterns of a lying person, only if a person is lying or not. The other documents cited in the International Search Report are even less relevant.

The dependent **claims 6-13** relate to preferred embodiments of the subject-matter

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International Application No. PCT/NL99/00489

of claim 5.

Therefore, claims 5-13 appear to satisfy the requirements of Art.33(2) (novelty), 33(3) (inventive step) and 33(4) (industrial applicability) of the PCT.

Title: APPARATUS FOR REGISTERING MOVEMENT PATTERNS OF HUMAN BEINGS

This invention relates to a method for registering movement patterns of human beings.

In the care of human beings, in particular relatively young children, such as babies, and patients, for instance in a hospital, it is of great importance that it can be
5 determined if the individual in question has a correct posture and movement pattern during a particular period of care, so as to prevent, for instance, suffocation or decubitus ulcers. For this purpose, it is conventional to
10 perform visual checks, for instance by walking past the crib or bed, or through video monitoring. This is particularly costly and labor-intensive and moreover may have as a consequence that the individual in question is disturbed while resting. It further requires a physical presence of the
15 attending person and entails a relatively high physical and mental pressure on that person.

In patient monitoring, for monitoring vital body functions such as heart rate and respiration, use is further made of monitoring systems connected directly to the patient,
20 such as respiration equipment or ECG devices. This has as an important disadvantage that such devices entail a great physical and mental pressure on the patient, while moreover such devices are to be connected via cables and tubes, which may entail risks for individuals.

25 The above-described methods for monitoring an individual further have as an important disadvantage that in each case only the instantaneous situation of the individual in question is checked. This means that decisions will be made merely on the basis of instantaneous data. This increases the
30 risk of wrong decisions, while further there is a risk that between the checks, dangerous, at any rate undesirable, situations arise, which, for instance, have not been anticipated.

Claims

1. A method for registering human movement patterns, in which a sensor part is attached to or onto an individual, which sensor part comprises at least one movement sensor and transmitting means for preferably wireless transfer of a
5 signal between said at least one movement sensor and a receiver, while on the basis of the at least one signal a movement history of the individual in question is recorded, on the basis of which history the health, in particular the safety, of the individual in question is monitored.
- 10 2. A method according to claim 1, wherein in the movement history at least one time-related representation of the position of at least one part of the body of the individual in question is recorded, while a threshold time is set during which at least one specific position of the at least one part
15 of the body is allowed, such that when this threshold time is exceeded, and depending on the movement history, an alarm signal is generated.
3. A method according to claim 2, wherein the at least one specific position, preferably a number of specific positions,
20 is or are set prior to use of the sensor part.
4. A method according to any one of the preceding claims, wherein prior to use of the sensor part, at least one allowable and/or at least one unallowable movement pattern is set, while the movement history is compared with the at least
25 one movement pattern, on the basis of which comparison an alarm signal is generated or not.
5. An apparatus for registering a movement pattern of at least one part of the body of an individual, on the basis of a number of parameters, and generating a signal on the basis
30 of at least one pre-set threshold value of at least one parameter or a set movement pattern, which apparatus comprises at least one sensor part having at least one movement sensor, which sensor part is equipped with means for

attachment to or onto the individual in question, at any rate the at least one part of the body, and a receiver, in particular a base station, the apparatus further comprising transmitting means and receiving means for wireless

5 communication between the sensor part and the receiver, for transfer of at least said signal.

6. An apparatus according to claim 5, wherein the at least one receiver is a first baby alarm or like device of a baby alarm set, the at least one signal being at least acoustic.

10 7. An apparatus according to claim 6, wherein an algorithm is provided for comparing the registered movement pattern with a pre-set allowable and/or unallowable movement pattern and activating at least the alarm signal on the basis of this comparison.

15 8. An apparatus according to any one of claims 5-7, wherein memory means are provided for storing at least a part of the registered movement history of the individual in question, at any rate the at least one part of the body.

9. An apparatus according to any one of claims 5-8, wherein
20 means are provided for continuously or semicontinuously generating a signal via the base station, in which signal at least the instantaneous movement situation, the instantaneous posture and/or a part of the movement history are, at least is, encoded.

25 10. An apparatus according to any one of claims 5-9, wherein setting means are provided for setting at least the at least one threshold value, allowable and/or unallowable movement patterns, kinds of signals, and the like.

11. An apparatus according to any one of claims 5-10,
30 wherein the sensor part comprises clamping means and a relatively smooth and flat, preferably rounded housing.

12. An apparatus according to any one of claims 5-11, wherein the sensor part comprises means for picking up audio signals, such as originating from breathing, heartbeat and
35 the like.

13. An apparatus according to any one of claims 5-12,
wherein means are provided for picking up via a telephone
connection signals originating from the at least one movement
sensor and/or any further registration means for, for
5 instance, audio signals, while preferably the sensor part
comprises means for responding to a specific telephone
signal, in particular a GSM connection.

14. Use of a movement sensor and transmitting and
receiving means for preventing suffocation of individuals, in
10 particular relatively young children, wherein, on the basis
of measuring signals of the at least one movement sensor,
information signals are generated via the transmitting and
receiving means.

PATENT COOPERATION TREATY

JES

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To:

PRINS, A.W. et al.
VEREENIGDE
Nieuwe Parklaan 97
NL-2587 BN The Hague
PAYS-BAS

27 NOV 2001

Beantwoord

Definit gezonden

Voor

de

Applicant's or agent's file reference

na

P10237PC00

PCT
NRF 2 29-1-2002
NOTIFICATION OF TRANSMITTAL OF
THE INTERNATIONAL PRELIMINARY
EXAMINATION REPORT
(PCT Rule 71.1)

Date of mailing
(day/month/year)

21.11.2001

IMPORTANT NOTIFICATION

International application No.
PCT/NL99/00489

International filing date (day/month/year)
29/07/1999

Priority date (day/month/year)
29/07/1999

Applicant

BRILMAN, Arend Jan

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.

4. REMINDER

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

Name and mailing address of the IPEA/

 European Patent Office
D-80298 Munich
Tel. +49 89 2399 - 0 Tx: 523656 epmu d
Fax: +49 89 2399 - 4465

Authorized officer

Marra, E

Tel. +49 89 2399-7235




PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference P10237PC00	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/NL99/00489	International filing date (day/month/year) 29/07/1999	Priority date (day/month/year) 29/07/1999
International Patent Classification (IPC) or national classification and IPC A61B5/113		
Applicant BRILMAN, Arend Jan		
<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 7 sheets, including this cover sheet.</p> <p><input checked="" type="checkbox"/> This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of 5 sheets.</p>		
<p>3. This report contains indications relating to the following items:</p> <ul style="list-style-type: none"> I <input checked="" type="checkbox"/> Basis of the report II <input type="checkbox"/> Priority III <input checked="" type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability IV <input type="checkbox"/> Lack of unity of invention V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement VI <input type="checkbox"/> Certain documents cited VII <input type="checkbox"/> Certain defects in the international application VIII <input type="checkbox"/> Certain observations on the international application 		
Date of submission of the demand 04/07/2000	Date of completion of this report 21.11.2001	
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer Kempin, H-F Telephone No. +49 89 2399 2716	



INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/NL99/00489

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, pages:

2-16	as originally filed	
1,1a	with telefax of	31/08/2001

Claims, No.:

1-14	with telefax of	31/08/2001
------	-----------------	------------

Drawings, sheets:

1/5-5/5	as originally filed
---------	---------------------

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/NL99/00489

- ☐ the description, pages:
☐ the claims, Nos.:
☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

III. Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been examined in respect of:

- ☐ the entire international application.
☒ claims Nos. 1-4, 14.

because:

- ☒ the said international application, or the said claims Nos. 1-4, 14 relate to the following subject matter which does not require an international preliminary examination (*specify*):
see separate sheet
- ☐ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. are so unclear that no meaningful opinion could be formed (*specify*):
- ☐ the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.
- ☐ no international search report has been established for the said claims Nos. .

2. A meaningful international preliminary examination cannot be carried out due to the failure of the nucleotide and/or amino acid sequence listing to comply with the standard provided for in Annex C of the Administrative Instructions:

- ☐ the written form has not been furnished or does not comply with the standard.
☐ the computer readable form has not been furnished or does not comply with the standard.

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/NL99/00489

1. Statement

Novelty (N)	Yes:	Claims	5-13
	No:	Claims	
Inventive step (IS)	Yes:	Claims	5-13
	No:	Claims	
Industrial applicability (IA)	Yes:	Claims	5-13
	No:	Claims	

2. Citations and explanations **see separate sheet**

Concerning Section III (Non-establishment of opinion ...)

1. Method **claim 1** includes the step of recording a movement history of the individual, on the basis of which an information signal can be generated. Therefore, Claim 1 relates to a collection of data which is of value for the prevention of certain diseases (e.g. suffocation or decubitus ulcers; see page 1, lines 5-9). Consequently, the steps defined in claim 1 concern the gathering of information from the body of a patient in the course of establishing a diagnosis, since diagnosis comes before prevention, and thus qualify the claim as a diagnostic method. Reference is made to decision T0964/99 of a Technical Board of Appeal of the EPO (to be published in the Official Journal EPO). This decision is, of course, not binding for examination under the PCT. However, the relevant provisions of the PCT (Rule 67.1(iv)) and EPC (Art.52(4)) are almost identical. Therefore, the examiner of this International Preliminary examining Authority considers that the reasoning of the Board is also applicable for present claim 1.

The dependent **claims 2-4** include the steps of claim 1. The method claims relate thus also to subject-matter mentioned in Rule 67.1(iv) PCT, in particular to a diagnostic method, for which no preliminary examination needs to be carried out (Art.34(4)a)i) PCT).

2. Use **claim 14** is equivalent to a method claim since it shall protect an activity (see the PCT Guidelines CIII-3.1 according to which there are only two basic categories of claims). Therefore, it is considered that the reasoning developed here-above with respect to claim 1 is -mutatis mutandis- also applicable to claim 14.

Concerning Section V (Reasoned statement ...)

1. Reference is made to the following documents:

D1: WO 99 04691 A (SENSITIVE TECHNOLOGIES, LLC) 4 February 1999
D2: EP-A-0 849 715 (GGT) 24 June 1998

2. The document D1 is regarded as being the closest prior art to the subject-matter

of **claim 5**, and discloses (the references in parentheses applying to this document):

an apparatus for registering movements of at least one part of the body of an individual, on the basis of a number of parameters, and generating a signal on the basis of at least one pre-set threshold value of at least one parameter or set movements for use in registering positions of individuals, in particular relatively young children, which apparatus comprises at least one sensor part, a receiver, in particular a base station, transmitting means and receiving means for wireless communication between the sensor part and the receiver, wherein the sensor part comprises means for attachment to or onto the individual in question, at any rate the at least one part of the body (see reference numeral 120 in figure 1 and page 15, line 19 to page 16, line 9).

The apparatus of claim 5 differs from the apparatus of D1 in that it comprises at least one movement sensor capable of registering movements of said at least one part of the body of the individual whereby movement patterns of lying positions are generated.

The objective problem to be solved was thus to provide an apparatus which is particularly adapted for registering movement patterns of individuals who are lying. The apparatus of D1 can distinguish between different positions but is not suitable to register movement patterns as defined in claim 1. Since D1 expressly discourages the skilled person from using movement transducers (see pages 1, 2 "Background of the invention"), the skilled person would not consider to replace the two-part sensor of D1 by a movement sensor as defined in claim 1. Since the cited passage is vague concerning other structural or functional features of the known apparatus, no further limitation of the subject-matter of claim 1 appears possible on the basis of this cited passage.

Document D2 is also only relevant in connection with the recognition of different positions to detect if a person has fallen. It is not suitable to detect movement patterns of a lying person, only if a person is lying or not. The other documents cited in the International Search Report are even less relevant.

The dependent **claims 6-13** relate to preferred embodiments of the subject-matter

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/NL99/00489

of claim 5.

Therefore, claims 5-13 appear to satisfy the requirements of Art.33(2) (novelty), 33(3) (inventive step) and 33(4) (industrial applicability) of the PCT.

Int. pat. appln. no. NL99/00489
Our letter of August 31, 2001

3 Rec'd PCT/PTO 28 JAN 2002

New Page

New Set of Claims

1. A method for registering movement patterns of individuals, in particular lying positions of relatively young children, in which a sensor part is attached to or onto an individual, which sensor part comprises at least one movement sensor and transmitting means for preferably wireless transfer of a signal between said at least one movement sensor and a receiver, while on the basis of the at least one signal a movement history of the individual in question is recorded and an information signal can be generated.
2. A method according to claim 1, wherein in the movement history at least one time-related representation of the position of at least one part of the body of the individual in question is recorded, while a threshold time is set during which at least one specific position of the at least one part of the body is allowed, such that when this threshold time is exceeded, and depending on the movement history, an alarm signal is generated.
3. A method according to claim 2, wherein the at least one specific position, preferably a number of specific positions, is or are set prior to use of the sensor part.
4. A method according to any one of the preceding claims, wherein prior to use of the sensor part, at least one allowable and/or at least one unallowable movement pattern is set, while the movement history is compared with the at least one movement pattern, on the basis of which comparison an alarm signal is generated or not.

AMENDED SHEET

Empt. 31/08/2001 13:11Z

EMPT.NR. 3101.000

new page 18

5. An apparatus for registering a movement pattern of at least one part of the body of an individual, on the basis of a number of parameters, and generating a signal on the basis of at least one pre-set threshold value of at least one

5 parameter or a set movement pattern for use in registering
lying positions of individuals, in particular relatively
young children, which apparatus comprises at least one sensor
part, a receiver, in particular a base station, transmitting
means and receiving means for wireless communication between
10 the sensor part and the receiver, wherein the sensor part
comprises means for attachment to or onto the individual in
question, at any rate the at least one part of the body, and
at least one movement sensor, capable of registering
movements of said at least one part of the body of the
15 individual.

6. An apparatus according to claim 5, wherein the at least one receiver is a first baby alarm or like device of a baby alarm set, the at least one signal being at least acoustic.

7. An apparatus according to claim 6, wherein an algorithm
20 is provided for comparing the registered movement pattern
with a pre-set allowable and/or unallowable movement pattern
and activating at least the alarm signal on the basis of this
comparison.

8. An apparatus according to any one of claims 5-7, wherein
25 memory means are provided for storing at least a part of the
registered movement history of the individual in question, at
any rate the at least one part of the body.

9. An apparatus according to any one of claims 5-8, wherein
means are provided for continuously or semicontinuously
30 generating a signal via the base station, in which signal at
least the instantaneous movement situation, the instantaneous

new page 19

posture and/or a part of the movement history are, at least is, encoded.

10. An apparatus according to any one of claims 5-9, wherein setting means are provided for setting at least the at least
5 one threshold value, allowable and/or unallowable movement patterns, kinds of signals, and the like.

11. An apparatus according to any one of claims 5-10, wherein the sensor part comprises clamping means and a relatively smooth and flat, preferably rounded housing.
10 12. An apparatus according to any one of claims 5-11, wherein the sensor part comprises means for picking up audio signals, such as originating from breathing, heartbeat and the like.

13. An apparatus according to any one of claims 5-12, wherein means are provided for picking up via a telephone
15 connection signals originating from the at least one movement sensor and/or any further registration means for, for instance, audio signals, while preferably the sensor part comprises means for responding to a specific telephone
20 signal, in particular a GSM connection.

14. Use of a movement sensor and transmitting and receiving means in a method for registering lying positions of individuals, in particular relatively young children, wherein, on the basis of measuring signals of the at least
25 one movement sensor, information signals are generated via the transmitting and receiving means.

3 Rec'd PCT/PTO 28 JAN 2002

Title: Method and apparatus for registering movement patterns of human beings.

This invention relates to a method for registering movement patterns of human beings.

In the care of human beings, in particular relatively

~~young children, such as babies, and patients, for instance, in~~

~~a hospital, it is of great importance that it can be~~

determined if the individual in question has a correct posture and movement pattern during a particular period of care, so as to prevent, for instance, suffocation or decubitus ulcers. For this purpose, it is conventional to perform visual checks, for instance by walking past the crib or bed, or through video monitoring. This is particularly costly and labor-intensive and moreover may have as a consequence that the individual in question is disturbed while resting. It further requires a physical presence of the attending person and entails a relatively high physical and mental pressure on that person.

In patient monitoring, for monitoring vital body functions such as heart rate and respiration, use is further made of monitoring systems connected directly to the patient, such as respiration equipment or ECG devices. This has as an important disadvantage that such devices entail a great physical and mental pressure on the patient, while moreover such devices are to be connected via cables and tubes, which may entail risks for individuals.

The above-described methods for monitoring an individual further have as an important disadvantage that in each case only the instantaneous situation of the individual in question is checked. This means that decisions will be made merely on the basis of instantaneous data. This increases the risk of wrong decisions, while further there is a risk that between the checks, dangerous, at any rate undesirable,

PCT/NL99/00489

new page 1a

August 31, 2001

situations arise, which, for instance, have not been anticipated.

From WO 99 04691 A an apparatus and a method is known for monitoring the respiration and movements of an infant to prevent for instance sudden infant death syndrome. To that end the lying position of the infant, that is face down or face up, is detected and compared to a pre-stored threshold value. An alarm may be generated when the threshold value is exceeded. The position is detected by means of a sensor which consists of two parts, a RF generator which is attached to the back of the infant, for instance to its clothing, and a receiving means, which must be mounted in the vicinity of the infant, for instance above its bed. Thus when the infant is lying at his back the signal received by the receiving means will be weaker than when the infant is lying face down.

INTERNATIONAL SEARCH REPORT

International Application No.

PCT/NL 99/00489

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 A61B5/113

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A61B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 99 04691 A (SENSITIVE TECHNOLOGIES, LLC) 4 February 1999 (1999-02-04) page 2, line 22 -page 4, line 13 page 12, line 23 -page 14, line 15 page 15, line 19 -page 18, line 11	1-14
X	EP 0 849 715 A (GGT) 24 June 1998 (1998-06-24) column 2, line 44 -column 3, line 41 column 5, line 50 - line 42	1-5,7-11
X	DE 42 27 483 C (IMF ELECTONIC) 25 November 1993 (1993-11-25) column 3, line 7 - line 64 column 5, line 22 - line 31 column 5, line 63 -column 7, line 11	1-3,5, 7-9
	-/-	

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"S" document member of the same patent family

Date of the actual completion of the international search

8 March 2000

Date of mailing of the international search report

15/03/2000

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 851 epo nl,
Fax (+31-70) 340-3016

Authorized officer

Rieb, K.D.

INTERNATIONAL SEARCH REPORT

Information on patent family members

Application No

PCT/NL 99/00489

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 9904691	A	04-02-1999	US 5986549 A AU 8491998 A AU 8641498 A WO 9905476 A US 6011477 A	16-11-1999 16-02-1999 16-02-1999 04-02-1999 04-01-2000
EP 849715	A	24-06-1998	DE 19653773 C	02-07-1998
DE 4227483	C	25-11-1993	NONE	
WO 9834577	A	13-08-1998	AU 6010698 A	26-08-1998

M.H

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference P10237PC00	FOR FURTHER ACTION see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, Item 5 below.	
International application No. PCT/NL 99/ 00489	International filing date (day/month/year) 29/07/1999	(Earliest) Priority Date (day/month/year)
Applicant BRILMAN, Arend, Jan		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 3 sheets.



It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.



the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international search was carried out on the basis of the sequence listing:



contained in the international application in written form.



filed together with the international application in computer readable form.



furnished subsequently to this Authority in written form.



furnished subsequently to this Authority in computer readable form.



the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.



the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☐ Certain claims were found unsearchable (See Box I).

3. ☐ Unity of invention is lacking (see Box II).

4. With regard to the title,



the text is approved as submitted by the applicant.



the text has been established by this Authority to read as follows:

APPARATUS FOR REGISTERING MOVEMENT PATTERNS OF HUMAN BEINGS

5. With regard to the abstract,



the text is approved as submitted by the applicant.



the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the drawings to be published with the abstract is Figure No.



as suggested by the applicant.



because the applicant failed to suggest a figure.



because this figure better characterizes the invention.



None of the figures.

Box III TEXT OF THE ABSTRACT (Continuation of Item 5 of the first sheet)

THE ABSTRACT IS CHANGED AS FOLLOWS:

An apparatus for registering a movement pattern of at least one part of the body of an individual, on the basis of a number of parameters, and generating a signal on the basis of at least one pre-set threshold value of at least one parameter or a set movement pattern, comprises at least one sensor part (1) having at least one movement sensor (8), which sensor part is equipped with means (6) for attachment to or onto the individual in question, the at least one part of the body, and a receiver, in particular a base station (20). The apparatus further comprises transmitting means (9) and receiving means (25) for wireless communication between the sensor part (1) and the base station (20), for transfer of at least said signal.

INTERNATIONAL SEARCH REPORT

International Application No

/NL 99/00489

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 A61B5/113

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A61B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 99 04691 A (SENSITIVE TECHNOLOGIES, LLC) 4 February 1999 (1999-02-04) page 2, line 22 -page 4, line 13 page 12, line 23 -page 14, line 15 page 15, line 19 -page 18, line 11 ---	1-14
X	EP 0 849 715 A (GGT) 24 June 1998 (1998-06-24) column 2, line 44 -column 3, line 41 column 5, line 50 - line 42 ---	1-5,7-11
X	DE 42 27 483 C (IMF ELECTRONIC) 25 November 1993 (1993-11-25) column 3, line 7 - line 64 column 5, line 22 - line 31 column 5, line 63 -column 7, line 11 --- -/--	1-3,5, 7-9

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

8 March 2000

Date of mailing of the international search report

15/03/2000

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

R1eb, K.D.

INTERNATIONAL SEARCH REPORT

International Application No

NL 99/00489

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 98 34577 A (H. LEWIN) 13 August 1998 (1998-08-13) page 3, line 4 - line 24 page 4, line 9 -page 5, line 6 page 9, line 8 -page 11, line 21 -----	1-3, 5, 12, 13

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

T/NL 99/00489

Patent document cited in search report		Publication date		Patent family member(s)	Publication date
WO 9904691	A	04-02-1999	US	5986549 A	16-11-1999
			AU	8491998 A	16-02-1999
			AU	8641498 A	16-02-1999
			WO	9905476 A	04-02-1999
			US	6011477 A	04-01-2000
<hr/>					
EP 849715	A	24-06-1998	DE	19653773 C	02-07-1998
<hr/>					
DE 4227483	C	25-11-1993	NONE		
<hr/>					
WO 9834577	A	13-08-1998	AU	6010698 A	26-08-1998
<hr/>					